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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,003	07/02/2001	Douglas E. Smith	1082-010	1140

33461 7590 01/14/2003
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EXAMINER	
MARTIR, LILYBETT	
ART UNIT	PAPER NUMBER

2855

DATE MAILED: 01/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/897,003	SMITH ET AL.
	Examiner	Art Unit
	Lilybett Martir	2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 October 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 35 is/are allowed.
- 6) Claim(s) 1-7, 9, 11, 25, 36 and 39-41 is/are rejected.
- 7) Claim(s) 8, 10, 12-24, 26-34, 37, 38, 42 and 43 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 03 October 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>11</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 36 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilhelm (Pat. 4,429,579).

- With respect to claim 1, Wilhelm teaches a pin member body as in element 22 disposed about a pin member axis, the pin member comprising a bending portion as in element 28, a sensing device as in elements 38 positioned within the bending portion for sensing a bending strain in the bending portion exclusive of a net axial strain, and for outputting a sensor measurement signal representative of the bending strain by means of elements 40 and 42; and a sensor measurement signal output device as in elements 40 and 42 for outputting the sensor measurement signal from the sensor device.
- With respect to claim 2, Wilhelm teaches the sensing devices as in elements 38 inherently sensing components of the bending strain in the bending portion along the x axis and a y axis, the x axis and the y axis being orthogonal to the pin member axis and to each other (note the position of the gauges in Figure 2).

- With respect to claim 3, Wilhelm teaches a pin member being comprised and secured by a bolt 32 as noted in Figure 1.
- With respect to claim 4, Wilhelm teaches the pin member body as in element 22 having a cylindrical shape about the pin member axis as noted in Figure 2.
- With respect to claim 5, Wilhelm teaches a pin member having a head as in element 22, and a bending portion as in element 28, the bending portion being adjacent to a head 24 or 26.
- With respect to claim 36, Wilhelm teaches a pin member body as in element 22 disposed about a pin member axis, the pin member comprising a bending portion as in element 28, a sensing device as in elements 38 positioned within the bending portion for sensing a bending strain in the bending portion exclusive of a net axial strain, and for outputting a sensor measurement signal representative of the bending strain; and a sensor measurement signal output device as in elements 40 and 42 for outputting the sensor measurement signal from the sensor device having a data receiving device 42 operatively coupled to the sensor measurement signal output device for receiving the sensor output signal as in element 62 as noted in Figure 3.
- With respect to claim 41, Wilhelm teaches a pin member body as in element 22 disposed about a pin member axis, the pin member comprising a bending portion as in element 28, sensing strain by means of a sensing device as in elements 38, and communicating a sensor measurement signal to a data receiving device as in element 42.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilhelm in view of Maw et al. (Pat. 5,783,751).

- With respect to claim 39, Wilhelm fails to disclose utilizing data receiving means comprising a data processor. Maw et al. teaches a strain-detecting pin that comprises a computer (data processor) as in element 62. One of ordinary skill in the art would have readily recognized the advantages and desirability of providing analyzing, recording and/or displaying means to make a device more modern and versatile.
- With respect to claim 40, Wilhelm fails to disclose utilizing data display means. Maw et al. teaches data receiving means comprising a data display as in element 62 (Col. 2, lines 49-52). One of ordinary skill in the art would have readily recognized the advantages and desirability of providing analyzing, recording and/or displaying means to make a device more modern and versatile.

5. Claims 6-7,9,11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilhelm in view of Malicki (Pat. 4,553,124).

- With respect to claim 6, Wilhelm teaches sensor elements as in elements 38 for measuring the bending strain. Wilhelm fails to disclose sensor elements being specifically positioned to measure the bending strain in the x-axis and the y-axis, but he does disclose that his he attaches four gauges to the sensing member 22 spaced apart from each other by 90 degrees (Col. 2-3, lines 65-1) that inherently should detect bending in an x and y axis. One of ordinary skill in the art would have readily recognized the advantages and desirability of providing gauges or sensing devices in an arrangement to specifically detect strain in a predetermined direction to make a measuring device versatile and accurate.
- With respect to claims 7,9 and 11, Wilhelm teaches axial sensors as in elements 38 for sensing strain in a pin member axial direction corresponding to the pin member axis. Wilhelm fails to disclose the x-axis and y-axis sensors comprising a tangential sensor for sensing strain in a tangential direction tangential to the shank perimeter. One of ordinary skill in the art would have readily recognized the advantages and desirability of providing gauges or sensing devices in an arrangement to specifically detect strain in a predetermined direction to make a measuring device versatile and accurate.
- With respect to claims 25 Wilhelm teaches a bridge assemblies as in elements 30. Wilhelm fails to disclose said bridge assemblies having an

axial stress measurement configuration and a bending stress measurement configuration. Malicki teaches a bolt with a strain gauge transducer assembly having a bending portion adjacent to the head of the pin member as noted in Figures 2 and 3, with sensor elements C1 and T1 positioned to measure the bending strain in the x-axis and the y-axis as noted in Figure 4, with bridge assemblies having an axial stress measurement configuration and a bending stress measurement configuration as noted in Figures 6-8 (Col. 5-6, lines 64-13), and a tangential sensor for sensing strain as noted in Figures 2-5. One of ordinary skill in the art would have readily recognized the advantages and desirability of providing gauges or sensing devices in an arrangement to specifically detect strain in a predetermined direction to make a measuring device versatile and accurate.

Allowable Subject Matter

6. Claim 35 is allowed. Claims 8,10,12-24,26-35,37-38 and 42-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, or if the limitations in one of said claims are introduced in the base claim including all of the limitations of any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-11 and 25-43 have been considered but are moot in view of the new ground(s) of rejection. Applicant's argument have been fully addressed by the above presented rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (703)305-6900. The examiner can normally be reached on 9:00 AM to 5:30 PM.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703)305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3432 for regular communications and (703)305-3432 for After Final communications.

10. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Lilybett Martir
Examiner
Art Unit 2855

L.M.
January 2, 2003

Hezron E. Williams
HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800